Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 2 Dkt: 875.092US1

In the Claims

Please amend the claims as follows:

- 1. (Original) A method to detect vanA in a sample, comprising:
- a) contacting a sample suspected of comprising amplified vanA nucleic acid with at least one vanA-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the vanA-specific oligonucleotide probe and vanA nucleic acid in the sample, wherein the vanA-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the vanA gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the vanA gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the vanA gene, the complement thereof, or a portion thereof; and
 - b) detecting or determining the presence or amount of hybrid formation.
- 2. (Original) A method to detect vanB in a sample, comprising:
- a) contacting a sample suspected of comprising amplified *vanB* nucleic acid with at least one *vanB*-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanB*-specific oligonucleotide probe and *vanB* nucleic acid in the sample, wherein the *vanB*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and
 - b) detecting or determining the presence or amount of hybrid formation.
- 3. (Original) A method to detect vanA in a sample, comprising:
 - a) contacting a biological sample suspected of comprising nucleic acid with at least one

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

vanA-specific oligonucleotide primer under conditions effective to amplify vanA nucleic acid, wherein the vanA-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the vanA gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the vanA gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the vanA gene, the complement thereof, or a portion thereof; and

- b) detecting or determining the presence or amount of amplified nucleic acid.
- 4. (Original) A method to detect vanB in a sample, comprising:
- a) contacting a biological sample suspected of comprising nucleic acid with at least one vanB-specific oligonucleotide primer under conditions effective to amplify vanB nucleic acid, wherein the vanB-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the vanB gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the vanB gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the vanB gene, the complement thereof, or a portion thereof; and
 - b) detecting or determining the presence or amount of amplified nucleic acid.
- 5. (Original) The method of claim 3 wherein one *vanA*-specific oligonucleotide primer comprises sequences corresponding to nucleotides 851 to 868 of the *vanA* gene or a portion thereof.
- 6. (Original) The method of claim 3 wherein one *vanA*-specific oligonucleotide primer comprises sequences corresponding to the complement of nucleotides 898 to 919 of the *vanA* gene or a portion thereof.
- 7. (Original) The method of claim 3 wherein the presence or amount of amplified nucleic acid is detected or determined with an oligonucleotide probe comprising sequences corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof or a portion

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 4 Dkt: 875.092US1

thereof.

8. (Original) The method of claim 1 wherein one *vanA*-specific oligonucleotide probe comprises sequences corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof or a portion thereof.

- 9. (Currently Amended) The method of claim 8 wherein the amplified vanB vanA nucleic acid is obtained by amplifying a biological sample comprising nucleic acid with at least one vanA-specific oligonucleotide primer comprising sequences corresponding to nucleotides 851 to 868 of the vanA gene or a portion thereof, or sequences corresponding to the complement of nucleotides 898 to 917 of the vanA gene or a portion thereof.
- 10. (Original) The method of claim 4 wherein one *vanB*-specific oligonucleotide primer comprises sequences corresponding to nucleotides 387 to 404 of the *vanB* gene or a portion thereof.
- 11. (Original) The method of claim 4 wherein one *vanB*-specific oligonucleotide primer comprises sequences corresponding to the complement of nucleotides 426 to 446 of the *vanB* gene or a portion thereof.
- 12. (Original) The method of claim 4 wherein the presence or amount of amplified nucleic acid is detected or determined with an oligonucleotide probe comprising sequences corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof or a portion thereof.
- 13. (Original) The method of claim 2 wherein one *vanB*-specific oligonucleotide probe comprises sequences corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof or a portion thereof.

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 5 Dkt: 875.092US1

14. (Original) The method of claim 13 wherein the amplified *vanB* nucleic acid is obtained by amplifying a biological sample comprising nucleic acid with at least one *vanB*-specific oligonucleotide primer comprising sequences corresponding to nucleotides 387 to 404 of the *vanB* gene or a portion thereof, or sequences corresponding to the complement of nucleotides 426 to 446 of the *vanB* gene or a portion thereof.

- 15. (Original) The method of claim 1, 2, 3 or 4 wherein the sample is a physiological sample.
- 16. (Original) The method of claim 15 wherein the sample is a peri-rectal sample.
- 17. (Original) The method of claim 1, 7 or 8 further comprising contacting a corresponding sample with a probe which is not a *vanA*-specific probe.
- 18. (Original) The method of claim 1, 7 or 8 further comprising contacting the sample with a probe which is not a *vanA*-specific probe.
- 19. (Original) The method of claim 17 or 18 further comprising comparing the presence or amount of hybrid formation with the *vanA*-specific oligonucleotide probe to the presence or amount of hybrid formation between the sample contacted with the non-*vanA* probe.
- 20. (Original) The method of claim 2, 12, or 13 further comprising contacting a corresponding sample with a probe which is not a *vanB*-specific probe.
- 21. (Original) The method of claim 2, 12, or 13 further comprising contacting the sample with a probe which is not a *vanB*-specific probe.

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 6 Dkt: 875.092US1

- 22. (Original) The method of claim 20 or 21 further comprising comparing the presence or amount of hybrid formation with the *vanB* probe to the presence or amount of hybrid formation between the sample contacted with the non-*vanB* probe.
- 23. (Original) The method of claim 17 or 18 wherein the non-vanA probe is a vanB-specific probe.
- 24. (Original) The method of claim 20 or 21 wherein the non-vanB probe is a vanA-specific probe.
- 25. (Original) The method of claim 7, 8, 12 or 13 wherein the probe is labeled.
- 26. (Original) The method of claim 23 wherein the *vanA*-specific probe is labeled with a different label than the *vanB*-specific probe.
- 27. (Original) The method of claim 24 wherein the *vanB*-specific probe is labeled with a different label than the *vanA*-specific probe.
- 28. (Original) A method to detect *vanA* nucleic acid and *vanB* nucleic acid in a sample, comprising:
- a) contacting a sample suspected of comprising amplified vanA nucleic acid or amplified vanB nucleic acid with at least one vanA-specific oligonucleotide probe and with at least one vanB-specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the vanA-specific oligonucleotide probe and amplified vanA nucleic acid and between the vanB-specific oligonucleotide probe and amplified vanB nucleic acid, wherein the vanA-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the vanA gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 7 Dkt: 875.092US1

nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, and wherein the *vanB*-specific oligonucleotide probe comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof; and

- b) detecting or determining the presence or amount of hybrid formation.
- 29. (Original) A method to detect *vanA* nucleic acid and *vanB* nucleic acid in a sample, comprising:
- a) contacting a biological sample suspected of comprising vanA or vanB nucleic acid with at least one vanA-specific oligonucleotide primer under conditions effective to amplify vanA nucleic acid and with at least one vanB-specific oligonucleotide primer under conditions effective to amplify vanB nucleic acid, wherein the vanA-specific oligonucleotide primer comprises sequences which include sequences substantially corresponding to nucleotides 870 to 896 of the vanA gene, the complement thereof, or a portion thereof, sequences substantially corresponding to nucleotides 851 to 868 of the vanA gene, the complement thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the vanA gene, the complement thereof, or a portion thereof, and wherein the vanB-specific oligonucleotides primer comprises sequences which include sequences substantially corresponding to nucleotides 387 to 404 of the vanB gene, the complement thereof, or a portion thereof, or a portion thereof, or a portion thereof, or a portion thereof, or sequences substantially corresponding to nucleotides 406 to 423 of the vanB gene, the complement thereof, or a portion thereof, and
 - b) detecting or determining the presence or amount of amplified nucleic acid.
- 30. (Original) The method of claim 29 wherein the presence or amount of amplified nucleic acid is detected with at least one *vanA*-specific oligonucleotide probe and at least one *vanB*-specific oligonucleotide probe.

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 8 Dkt: 875.092US1

- 31. (Original) The method of claim 28 or 30 wherein the at least one *vanA*-specific oligonucleotide probe and the at least one *vanB*-specific oligonucleotide probe have different labels.
- 32. (Original) An oligonucleotide composition comprising a first oligonucleotide comprising sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to *vanA* DNA.
- 33. (Original) An oligonucleotide composition comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 406 to 423 of the *vanB* gene the complement thereof, or a portion thereof, an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof, or a combination thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to *vanB* DNA.
- 34. (Original) The oligonucleotide composition of claim 32 wherein at least one oligonucleotide has the length and sequence of any of SEQ ID NOs:2-4.
- 35. (Original) The oligonucleotide composition of claim 33 wherein at least one oligonucleotide has the length and sequence of any of SEQ ID NOs:6-9.

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 9 Dkt: 875.092US1

36. (Original) The oligonucleotide composition of claim 32 or 33 wherein the oligonucleotide is labeled.

- 37. (Original) A kit comprising an oligonucleotide specific for a vanA gene and/or a vanB gene in a test sample, comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 870 to 896 of the vanA gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 406 to 423 of the vanB gene, the complement thereof, or a portion thereof, wherein the oligonucleotide hybridizes under stringent hybridization conditions to vanA DNA or vanB DNA.
- 38. (Original) The kit of claim 37 further comprising at least one non-vanA or one non-vanB probe.
- 39. (Original) The kit of claim 37 further comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 387 to 404 of the *vanB* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof.
- 40. (Original) The kit of claim 37 further comprising an oligonucleotide comprising sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 868 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof.
- 41. (Original) The kit of claim 37 wherein at least one oligonucleotide is labeled.
- 42. (Original) A kit comprising one or more oligonucleotides specific for a vanA gene in a test sample, comprising: an oligonucleotide comprising sequences substantially corresponding

Serial Number: 10/661,094

Filing Date: September 12, 2003

Title: METHOD AND KIT FOR IDENTIFYING VANCOMYCIN-RESISTANT ENTEROCOCCUS

Page 10 Dkt: 875.092US1

to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion thereof, or a combination thereof.

43. (Original) A kit comprising one or more oligonucleotides specific for a *vanB* gene in a test sample, comprising: an oligonucleotide comprising sequences substantially corresponding to nucleotides 645 to 645 of the *vanB* gene, the complement thereof, or a portion thereof, or an oligonucleotide comprising sequences substantially corresponding to nucleotides 426 to 446 of the *vanB* gene, the complement thereof, or a portion thereof, or a combination thereof.